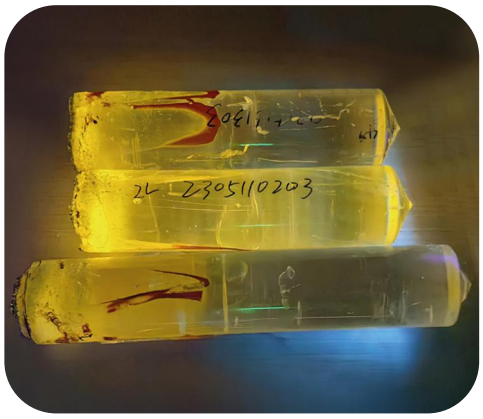
CsI(Tl) Crystal



Cesium iodide crystals can be divided into three types based on the dopant, CsI(Tl), CsI(Na) and pure CsI, all of them are colorless transparent cubic crystals. CsI crystals have excellent scintillation properties, meaning they can efficiently convert incident radiation into visible light. This property makes CsI crystals widely used in scintillation detectors for measuring ionizing radiation such as gamma rays and X-rays.

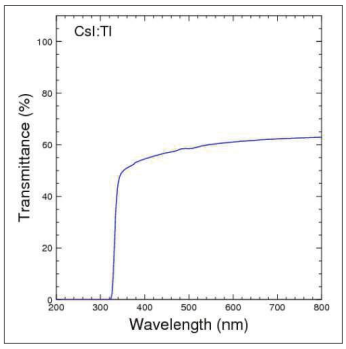
General parameters	CsI(Tl)	Unit
Density	4.53	g/cm^3
Melting Point	894	K
Wavelength of Emission Peak	550	nm
Light Output	56,000	ph/MeV
Decay Constant	1,020	ns
Cleavage	no	/
Hygroscopic	slightly	/
Refractive Index	1.79	/
Hardness	2	mohs

Basic Information

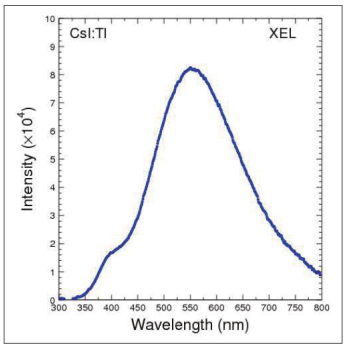
- Growth technique ---------- Bridgman
- Dimension(max) ---------- Diameter 120 mm×400 mm
- Achieved items ---------- Single crystal and array

Characterization

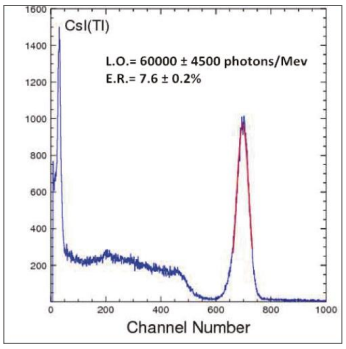
- Dimension of CsI(Tl): 28×28×28 mm; PMT: R1306; Reflector: Teflon(0.80 mm); Radiation source: Cs^{137}; HV: 650V; Absolute value of light output: 56,000 photons/MeV; Energy resolution: 7.6%; Decay time: 1,020 ns



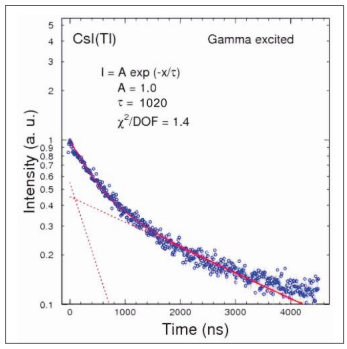
Transmittance curve



X-Ray excited Luminescence curve



Light output curve & Energy resolution curve



Scintillation decay curve by gamma ray

Web: www.epic-crystal.com Tel: +86 512-5013-5884 Email: sales@epic-crystal.com
Add: 7# Building, No.1 Jinjie Road, Huaqiao Ecnomic Development Area, Kunshan City, Jiangsu Province 215332, China

CsI(Na) Crystal

Sodium doped cesium iodide, Csl(Na), has a relativelyhigh output, around 85% of Nal(Tl), its emission peak is at 420 nm and is well matched to the photomultiplier (PMT) which make it well suited for well logging, space researchor other applications where severe shock conditions are encountered.

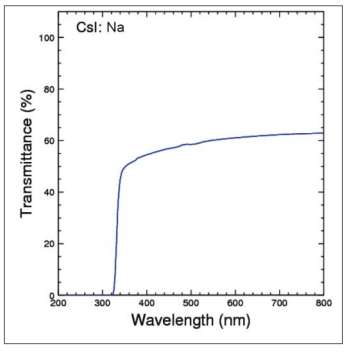
General parameters	CsI(Na)	Unit
Density	4.51	g/cm^3
Melting Point	894	K
Wavelength of Emission Peak	420	nm
Light Output	40,000	ph/MeV
Decay Constant	630	ns
Cleavage	no	/
Hygroscopic	yes	/
Refractive Index	1.84	/
Hardness	2	mohs

Basic Information

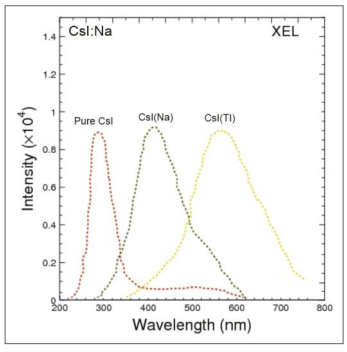
- Growth technique ---------- Bridgman
- Dimension(max) ---------- Diameter 120 mm×300 mm
- Achieved items ---------- Bare crystal and encapsulated

Characterization

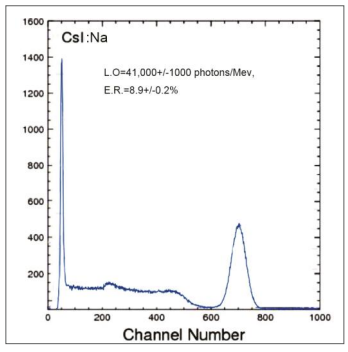
- Dimension of Csl(Na): 38×45×45 mm; PMT: R6233; Reflector: Teflon(0.80 mm); Radiation source: Cs^{137}; HV: 650V; Absolute value of light output: 40,000 photons/MeV; Energy resolution: 8.9%; Decat time: 630 ns



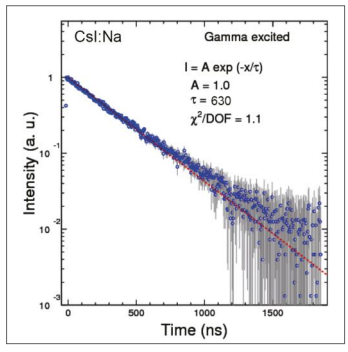
Transmittance curve



X-Ray excited Luminescence curve



Light output curve & Energy resolution curve



Scintillation decay curve by gamma ray excited

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Pure CsI Crystal

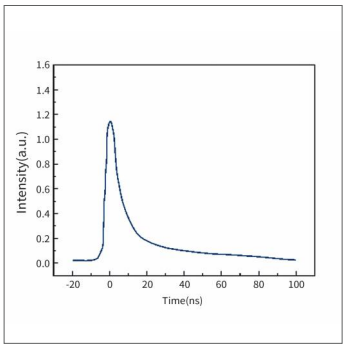
The decay time corresponding to the fast component of pure cesium iodide(CsI) is 16 ns, and the emission peak is at 315 nm. It can be used in fast time required, such as the electromagnetic calorimeter in the electron-positron collider. In addition, it has strong radiation resistance.

General parameters	Pure CsI	Unit
Density	4.51	g/cm^3
Melting Point	894	K
Wavelength of Emission Peak	315	nm
Light Output	3,500	ph/MeV
Decay Constant	16	ns
Cleavage	no	/
Hygroscopic	slightly	/
Refractive Index	1.95	/
Hardness	2	mohs

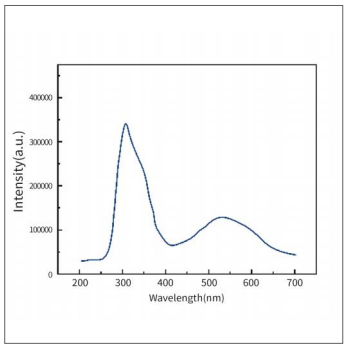
Basic Information

- Growth technique ---------- Bridgman
- Dimension(max) ---------- Diameter 120 mm×300 mm
- Achieved items ---------- Bare crystal and encapsulated

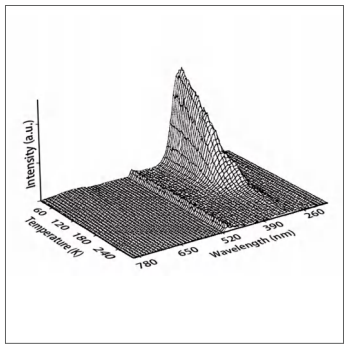
Characterization



Decay time curve



X ray radioluminescence spectra



Csl scintillator crystal A-41 X-Ray 30KV 5mACooling RL